

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
14 July 2005 (14.07.2005)

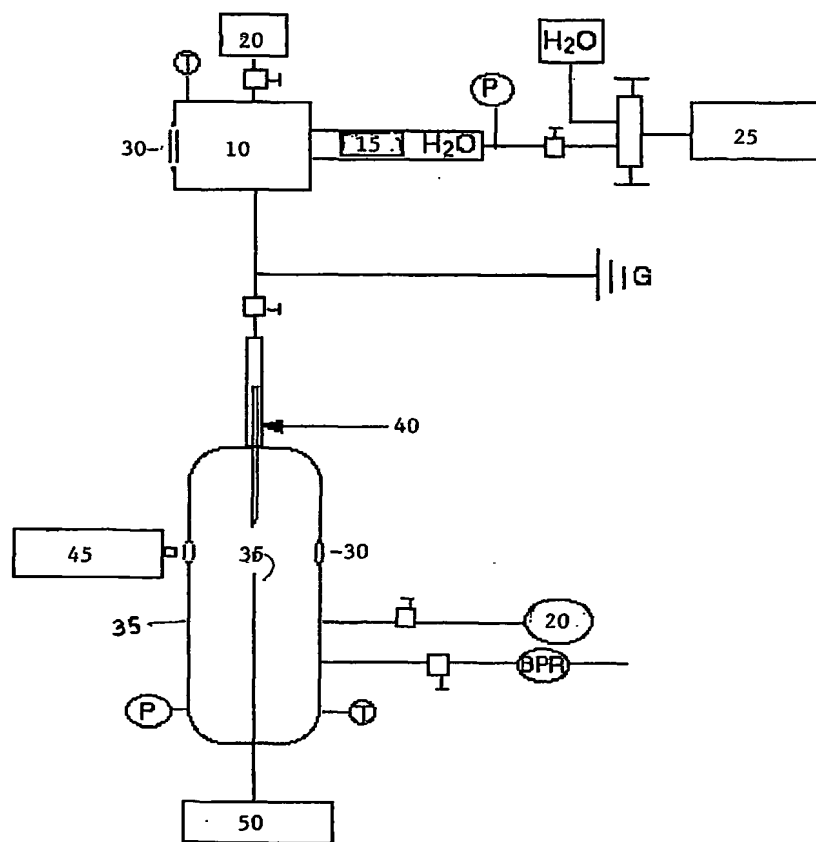
PCT

(10) International Publication Number
WO 2005/064047 A1

- (51) International Patent Classification⁷: **D01D 5/08**,
D02G 3/22, D06M 11/00
- (21) International Application Number:
PCT/US2004/043096
- (22) International Filing Date:
23 December 2004 (23.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/531,675 23 December 2003 (23.12.2003) US
- (72) Inventors; and
(75) Inventors/Applicants (*for US only*): **MCHUGH, Mark** [US/US]; 1122 West Avenue, Richmond, Virginia 23220 (US). **SHEN, Zhihao** [US/US]; 9010 Patterson Avenue, Apt 9, Richmond, Virginia 23229 (US). **GEE, Diane** [US/US]; 2907 St. Regis Drive, Richmond, Virginia 23236 (US). **KARLES, Georgios** [US/US]; 11829 Summer Stream Drive, Richmond, Virginia 23233 (US). **NEPOMUCENO, Jose** [US/US]; 16052 Daybreak Lane, Beaverdam, Virginia 23105 (US). **HUVARD, Gary** [US/US]; 12218 Prince Philip Lane, Chesterfield, Virginia 23838 (US).
- (74) Agents: **WHITHAM, Michael, E.** et al.; Whitham, Curtis & Christofferson P.C., 11491 Sunset Hills Road, Suite 340, Reston, VA 20190 (US).
- (71) Applicant (*for all designated States except US*): **VIRGINIA COMMONWEALTH UNIVERSITY** [US/US]; 800 East Leigh Street, Suite 113, Richmond, VA 23219 (US).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

[Continued on next page]

(54) Title: METHOD OF PRODUCING FIBERS BY ELECTROSPINNING AT HIGH PRESSURES



(57) Abstract: A process of making fibers by electrostatic spinning includes the use of a mixing vessel (10), a piston (15) for pressurizing the polymer, carbon dioxide sources (20) for lowering the viscosity of the polymer or pressurizing the collection vessel (35), a pressure generator (25), view ports (30), a target (36), a spinning needle (40), a camera/TV recorder (45) and a voltage source (50).

WO 2005/064047 A1



GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.